

ON A COLLECTION OF DRAGONFLIES FROM
CENTRAL AUSTRALIA, WITH DESCRIPTIONS
OF NEW SPECIES.

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(Plate xlii.)

Up to the present time nothing whatever has been known regarding the Odonata of that vast tract of territory lying east and west of the overland telegraph route from Oodnadatta to Pine Creek. Thanks, however, to the keenness and energy of Mr. J. F. Field, late of Tennant's Creek, N.T., a large number of specimens from that locality have lately been secured. The collection was made during a period of over a year, from September, 1905, to December, 1906, and comprises some three hundred specimens. As might be expected in a district with so scanty a rainfall, the number of species is few, yet the collection forms a basis on which to build a knowledge of the Odonata of the most inaccessible region in Australia.

Tennant's Creek lies well within the Northern Territory, being some six hundred miles inland from Port Darwin, and a somewhat farther distance from the South Australian railway terminus at Oodnadatta. Its longitude is approximately 134° E., and its latitude $19^{\circ} 30'$ S. Hence it is clear that the Odonata of this locality may be regarded as fairly typical of the vast area of arid country in Central Australia. Though the locality is well within the tropics, yet the collection exhibits no definite tropical forms; and it is extremely probable that the tropical species which occur

so abundantly along the coast of the Northern Territory and Queensland have altogether failed to establish themselves any distance inland, owing to the altered conditions of climate.

Of the ten species in the collection, two are new and exceedingly interesting forms. One of these is the type of a new and remarkable genus. Of the remaining eight, one is the cosmopolitan *Pantala flavescens* Fabr., which appears to be very scarce; the other seven are species which are common over the whole of Australia.

The following is an analysis of the three hundred and twenty specimens which I have examined :—

Name.	Males.	Females.	Total.
<i>Pantala flavescens</i> Fabr.....	2	2	4
<i>Diplacodes hematodes</i> Burm.....	43	53	96
„ <i>bipunctata</i> Brauer.....	3	0	3
<i>Orthetrum caledonicum</i> Brauer.....	34	2	36
<i>Hemicordulia tau</i> Selys.....	4	0	4
<i>Hemianax papuensis</i> Burm.....	0	1	1
<i>Lestes aridus</i> , n.sp.....	81	30	111
<i>Austrosticta Fieldi</i> , n.sp.....	3	2	5
<i>Ischnura delicata</i> Selys.....	16	19	35
<i>Xanthagrion erythroneurum</i> Selys.....	15	10	25
Total.....	201	119	320

There were also several nymphs of *Ischnura delicata*.

LESTES ARIDUS, n.sp.

(Plate xlii., figs. 4-5.)

♂. Total length 41 mm., abdomen 32 mm. Wings: fore 22 mm., hind 21 mm.

Wings: *Neuration* black; *pterostigma* 1.3 mm., dark brown. *Nodal Indicator* | 2 9-10 | Head: *Eyes* dark brown; *occiput* marked with a | 2 8-9 | pale transverse line about 1 mm. long, slightly enlarged on each side, where it meets the eye, into a small oval spot; *epicranium* black; *ocelli* black, each surrounded by a conspicuous pale brownish ring; *antennæ* black, a very pale

spot at the base, in front, and another on the basal joint; *clypeus*, *labrum* and *labium* pale greyish-brown, this colour extending on to the eyes on either side; *mouth* edged with black. **THORAX:** *Prothorax* dull blackish with three greyish-blue spots, and a pale collar behind. *Meso-* and *metathorax* dull bronzy-black, a fine line along the dorsal ridge; a pair of humeral bands, pale straw-coloured in the young male, greyish-blue in the mature insect; these are followed on each side by a band of the groundcolour, the rest of the sides being greyish-blue, shading to greyish-brown underneath. *Notum* of immature male dull orange; in the mature insect the scuta and scutella are pale blue. *Legs* black above, pale brownish beneath, coxæ pale brownish. **ABDOMEN** slender; 1-2 and 7-10 very slightly thickened. **COLOUR:** 1, pale blue, with an irregular black dorsal patch: 2, dark metallic green, enclosing a long irregular dorsal blue spot, shaped somewhat like a bishop's mitre, and enlarged at the anal end of the segment: 3-7, dark metallic green, a broad transverse blue band at the base of each, and a narrow dorsal blue line extending to the anal sutures; in 3-5 this line ends in a narrow spear-head mark: sides of 2-7 pale greyish-blue, sutures black: 8, dark metallic greenish-black, a pale blue dorsal line, anal suture black: 9, pale blue, a narrow transverse basal black line: 10, pale blue. **APPENDAGES:** *Superior* 1.2 mm., forcipate, black, slightly downy; the inner margin slightly hollowed out towards the tips, and carrying a large spine just beyond the middle; outer margin with several minute spines or teeth. *Inferior* 0.5 mm., close together, subconical, pale brownish.

♀. Total length 38 mm., abdomen 28.5 mm. Wings: fore 23 mm., hind 22 mm.

Pterostigma slightly longer than in male, markings of thorax pale straw-coloured. Abdomen cylindrical, thicker than in male, 8-10 slightly swollen. Colour dull metallic greenish-black, marked as follows: 1-2 as in male, but duller: 3-7 with the basal bands narrower than in the male, the dorsal line straight and regular, and bordered by two small slanting black spots about 1 mm. from the anal end of each segment; colour of markings

dull bluish or greyish; sutures of 2-7 broadly black: 8 with no dorsal line, but a pair of tiny black dorsal spots, a pale transverse band in the sutures of 7 and 8: 9 unmarked: 10 with basal third irregularly black, rest pale greyish or brownish. Ovipositor brownish, carrying two short filaments. Appendages 0.6 mm., wide apart, narrow subconical, pale brownish, tips slightly darker.

Hab.—Tennant's Creek, N.T.; common round the waterholes; September-April. Probably widely distributed in Central Australia.

This species is very closely allied to *Lestes leda* Selys, and to *L. analis* Rambur, especially the latter. The male may be readily distinguished from all other Australian species of the genus by the *last two segments* of the abdomen being pale blue. The female would be difficult to separate from those of the above-mentioned species, except for the small slanting dorsal black marks on segments 3-8, which, however, are not always very conspicuous in dried specimens. The appendages of the male differ considerably from those of *L. analis*, male, being smaller, and not bent backwards at all at the tips (Plate xlii., figs.3-4). The young insects appear to have the orange-pink colour of young specimens of *L. analis*, especially on the notum; and it is probable that the blue colour of the living insect is very pale, as in *L. analis*, and not rich blue as in *L. leda*.

AUSTROSTICTA, n.g.

Abdomen of both sexes short and rather thick. Superior appendages of male *straight*, inferior forcipate and projecting beyond superior. Wings petiolate to the level of the second antenodal; inferior sector of triangle absent. Basal postcostal nervule *placed further from base of wing than the first antenodal*. Superior sector of triangle terminating *well beyond the vein descending from the nodus*, forming three large cells and one small one along the postcostal margin. Median sector arising *slightly before* the nodal cross-vein. Postnodals 7-9.

Allied to *Isosticta* Selys, from which it differs in the following important points:—

Genus *Isosticta*.

Head narrow, thorax and abdomen very slender. Superior appendages of male *forcipate*. Basal postcostal nervule *before* first antenodal (Pl.xlii., fig.1,*a*). Superior sector of triangle terminating *at* level of nodus, forming *one or two* postcostal cells (fig.1,*b*). Median sector arising *at* the nodal cross-vein (fig.1,*c*). Postnodals 10-13.

Genus *Austrosticta*.

Head and thorax stouter, abdomen thicker and shorter. Superior appendages of male *straight*. Basal postcostal nervule *after* first antenodal (Pl. xlii., fig.2,*a*). Superior sector of triangle terminating *beyond* level of nodus, forming *three large and one small* postcostal cells (fig.2,*b*). Median sector arising *slightly before* the nodal cross-vein (fig.2,*c*). Postnodals 7-9.

AUSTROSTICTA FIELDI, n.sp.

(Plate xlii., figs.6-9).

♂. Total length 37 mm., abdomen 29 mm. Wings: fore 21 mm., hind 20 mm.

Wings rather narrow, fragile; *neuration* very open and thin; *pterostigma* trapezoidal, 0.8 mm., pale brownish. *Nodal Indicator* $\left\{ \begin{array}{l} 2 \text{ } 8-9 \\ 2 \text{ } 7-8 \end{array} \right.$. Head narrow, width 3.5 mm. *Eyes* brown, black behind next occiput; *epicranium* black, a pale straw-coloured line along the occipital ridge, and a curved line of the same colour in front near the clypeus; *ocelli* black; *antennae* black with pale brown bases; *postclypeus* black, *anteclypeus* brownish spotted with black; *labrum* bright orange-brown; *labium* very pale straw-colour. *Thorax*: *Prothorax* rather large, pale straw-colour, with a large squarish dorsal patch of dark metallic green, covering nearly the whole dorsal surface. *Meso-* and *metathorax* dark metallic green; a fine straight dorsal line; a pair of narrow humeral bands, slightly curved, straw-

coloured, followed below on each side by an equal and parallel band of the groundcolour; rest of sides and underside pale straw-colour. *Legs* straw-colour, touched with black near joints. *Abdomen* cylindrical, rather stout, 8-10 somewhat clubbed. Colour: dorsal surface dark metallic green, broken at the sutures (except for a very fine mid-dorsal line) by narrow transverse bands of pale straw-colour. Sides straw-colour shaded with green; sides of 8-9 shaded with dark brown; 10 exceedingly small, straw-coloured, a small square dorsal spot of dark metallic green. *Appendages* very remarkable. *Superior* about 1 mm., slightly separated, broadly subcornute, pale straw-colour. *Inferior* very large, projecting nearly 0·5 mm. beyond superior; bases wide, subconical, pale straw-colour; the extremities, however, thin, black, forcipate; separated by a small projection on segment 10. Seen sideways, they appear to curve slightly upwards (Plate xlii., figs. 6, 8).

♀. Very similar to male. Wings slightly longer, head and thorax slightly larger. Abdomen very slightly broader, 8-10 enormously clubbed; colour same as in male; 10 projecting below appendages into a black rounded tubercle. Ovipositor reaching beyond end of 10, brownish, with a pair of black divergent filaments 0·5 mm. long. *Appendages* close together, short, 0·5 mm., subconical, brownish.

Hab.—Tennant's Creek, N.T.; very rare; two males and a female in poor condition; April, 1906.

A most remarkable insect, but dull-coloured and very likely to be overlooked. Easily distinguished from its nearest relative, *Isosticta simplex* Martin, by its shorter and thicker abdomen and by the generic characters given above.

In conclusion, I wish to tender my heartiest thanks to Mr. J. F. Field for the interest and keenness with which he undertook to supply me with specimens, and to his aboriginal servant, Billy, who wielded the net with the greatest sagacity and discrimination, and evidently handled the specimens with much care.

EXPLANATION OF PLATE XLII.

- Fig. 1.—*Isosticta simplex* Martin; wing.
 Fig. 2.—*Austrosticta Fieldi*, n.sp.; wing.
 Fig. 3.—*Lestes analis* Rambur ♂; appendages, seen from above.
 Fig. 4.—*Lestes aridus*, n.sp. ♂; appendages, seen from above.
 Fig. 5.— „ „ n.sp. ♀; appendages, seen sideways.
 Fig. 6.—*Austrosticta Fieldi*, n.sp. ♂; appendages, seen from above.
 Fig. 7.— „ „ „ ♀; appendages, seen from above.
 Fig. 8.— „ „ „ ♂; appendages, seen sideways.
 Fig. 9.— „ „ „ ♀; appendages, seen sideways.